II. AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.   (currently amended)   A method of retrieving channel characteristics of a discrete multi-tone communication channel having a plurality of bins, comprising the steps of:

determining and storing on a per bin basis channel frequency response and noise measurements at a first end of the channel at initialization;

determining and storing a signal-to-noise measurement on a per bin basis at the first end at show time; and

retrieving the stored channel frequency response, noise and signal-to-noise measurements at a second end of the channel; and

~~analyzing time dependent changes in cross talk levels and line attenuation at the second end of the channel~~.

2.   (previously presented) A method as claimed in claim 1 wherein the first end is a central office (CO) end, and the second end is a customer premise equipment (CPE) end.

3.   (original) A method as claimed in claim 1 wherein the channel is asymmetrical.

4.   (previously presented) A method as claimed in claim 1 wherein the first end is a customer premise equipment (CPE) end, and the second end is a central office (CO) end.

5.   (original) A method as claimed in claim 1 wherein the channel is non-overlapping.

6.   (previously presented) A method as claimed in claim 1 wherein the channel is an Asymmetric Digital Subscriber Line (ADSL) channel.

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7. (previously presented) A method as claimed in claim 1 wherein the channel is a very high bit-rate DSL (VDSL) channel.

8. -9. (cancelled)

10. (currently amended) An apparatus for retrieving channel characteristics of a discrete multi-tone communication channel having a plurality of bins, the apparatus comprising:

a first circuit for determining and storing on a per bin basis channel frequency response and noise measurements at a first end of the channel

a second circuit for determining and storing a signal-to-noise measurement on a per bin basis at the first end; and

a first receiver for retrieving the stored frequency response, noise and signal-to-noise measurements at a second end of the channel; and

~~an analyzer at the second end for analyzing time dependent changes in cross talk levels and line attenuation.~~

11. (previously presented) An apparatus as claimed in claim 10 wherein the first end is a central office (CO) end, and the second end is a customer premise equipment (CPE) end.

12. (original) An apparatus as claimed in claim 10 wherein the channel is asymmetrical.

13. (previously presented) An apparatus as claimed in claim 10 wherein the first end is a customer premise equipment (CPE) end, and the second end is a central office (CO) end.

14. (original) An apparatus as claimed in claim 10 wherein the channel is non-overlapping.

15. (previously presented) An apparatus as claimed in claim 10 wherein the channel is an Asymmetric Digital Subscriber Line (ADSL) channel.

16.   (previously presented) An apparatus as claimed in claim 10 wherein the channel is a very high bit-rate DSL (VDSL) channel.

17-30. (cancelled)

31.   (currently amended) ~~A storage medium readable by a computer encoding a computer program for execution by the computer to carry out a method~~ <s>A computer readable medium containing program instructions</s> for retrieving channel characteristics of a discrete multi-tone communication channel having a plurality of bins, the computer program comprising <s>the steps of</s>:
    code means for determining and storing on a per bin basis channel frequency response and noise measurements at a first end of the channel at initialization;
    code means for determining and storing a signal-to-noise measurement, on a per bin basis at the first end at show time; and
    code means for retrieving the stored channel frequency response, noise and signal-to-noise measurements at a second end of the channel<s>; and</s>
    <s>analyzing time dependent changes in cross talk levels and line attenuation at the second end of the channel.</s>

32.   (previously presented) A computer readable medium as claimed in claim 31 wherein the first end is a central office (CO) end, and the second end is a customer premise equipment (CPE) end.

33.   (previously presented) A computer readable medium as claimed in claim 31 wherein the channel is asymmetrical.

34.   (previously presented) A computer readable medium as claimed in claim 31 wherein the first end is a customer premise equipment (CPE) end, and the second end is a central office (CO) end.

35.   (previously presented) A computer readable medium as claimed in claim 31 wherein the channel is non-overlapping.

36.   (previously presented) A computer readable medium as claimed in claim 31 wherein the channel is an Asymmetric Digital Subscriber Line (ADSL) channel.

37.   (previously presented) A computer readable medium as claimed in claim 31 wherein the channel is a very high bit-rate DSL (VDSL) channel.

38.   (new) The method as claimed in claim 1, wherein the channel frequency response at initialization, $H_R(f)$ is represented by a normalized complex number $a(i)$ +$jb(i)$.

39,   (new) The method as claimed in claim 1, wherein the channel frequency response at initialization is referred to tip and ring of a cooper loop.

40.   (new) The method as claimed in claim 1, wherein the noise measurement at initialization is referred to tip and ring of a cooper loop.

41.   (new) The apparatus as claimed in claim 10, wherein the channel frequency response at initialization, $H_R(f)$ is represented by a normalized complex number $a(i)$ +$jb(i)$.

42,   (new) The apparatus as claimed in claim 10, wherein the channel frequency response at initialization is referred to tip and ring of a cooper loop.

43.   (new) The apparatus as claimed in claim 10, wherein the noise measurement at initialization is referred to tip and ring of a cooper loop.

44.   (new) The method as claimed in claim 1, further comprising the step of analyzing time dependent changes in cross talk levels and line attenuation at the second end of the channel.

45.   (new) The apparatus as claimed in claim 10, further comprising an analyzer at the second end for analyzing time dependent changes in cross talk levels and line attenuation.

46.   (new) The storage medium as claimed in claim 31, further comprising code means for analyzing time dependent changes in cross talk levels and line attenuation at the second end of the channel.

47.   (new) A method as claimed in claim 1 wherein the channel is symmetrical.

48.   (new) A method as claimed in claim 1 wherein the channel is overlapping.

49.   (new) An apparatus as claimed in claim 10 wherein the channel is symmetrical.

50.   (new) An apparatus as claimed in claim 10 wherein the channel is overlapping.